

**REMARKS/ARGUMENTS**

Claims 1 - 3, 10, and 14 - 25 are pending. Claims 16 - 25 have been appended.

The claims as originally filed were subject to a restriction requirement. In a response filed May 2, 2003, claims 1 - 3, 10, 14, and 15 were elected for further prosecution. Claims 4 - 9 and 11 - 13 were withdrawn.

Claim 14 was rejected under 35 U.S.C. Section 112, First paragraph in connection with its recitation of "bonding portions." Claims 1, 10, and 14 were rejected under 35 U.S.C. Section 112, Second paragraph for reciting extraneous text.

Claims 1 - 3, 10, 14, and 15 were rejected under 35 U.S.C. Section 103 for allegedly being obvious in view of U.S. Pat. No. 5,834,848 (Iwasaki), Japanese Application No. 11044016 (Shoji Ikuo, hereinafter "Ikuo"), and U.S. Pat. No. 6,207,259 (Iino et al.).

The present invention is directed to electronic devices. An aspect of the invention, for example as recited in claim 1, is a bonding junction which includes "Cu balls and Cu-Sn compounds containing  $\text{Cu}_6\text{Sn}_5$ , said Cu balls being bonded to each other by said Cu-Sn compounds."

Ikuo describes an intermetallic compound suitable for solder paste are selected from the group consisting of "Sn, Ag, Cu, Bi, Zn, In, Au, Ni, Sb, Pd, Pt, and Ge." Abstract. Ikuo also discloses that the intermetallic compound can be combinations of metals selected from the group consisting of "CuSn, AgSn, AuBi, AuIn, NiSn, AgSb, BiIn, CuGe, InPd, SbAn, etc." *Id.*

The priority date of Ikuo is September 12, 2000, its publication date. The instant application claims priority from Japanese Application No. 2000-180719, filed June 12, 2000 (hereinafter, "'719" application), and Japanese Application No. 2000-396905, filed December 25, 2000.

Ikuo was cited for showing the use of the metals Sn and Cu, among other metals. However, the '719 application discloses the use of Cu and Sn to form a paste. Attached hereto as Appendix A is a full, true, accurate, and faithful English translation of the '719 application

(figures not included). A Declaration signed by the translator Kiyooki Isozaki accompanies the translated material.

The English translation of the '719 application beginning on page 5 paragraph [0010], discloses "a paste, in which Cu balls 1 ... and Sn solder balls 2 ... are appropriately dispersed in small quantities via a flux 4. When this paste is subject to reflow ... the Sn solder balls 2 melt ... to wet the Cu balls 1. [A] compound ( $\text{Cu}_6\text{Sn}_5$ ) of Cu and Sn is formed by performing short-time aging at  $200^\circ\text{C}$  ... ." The '719 application discloses the subject matter of the invention as recited in the pending claims. The '719 application has an earlier priority date than the Ikuo reference. It respectfully submitted, therefore, that the Ikuo reference is not a proper reference on which to base any rejection of the claims.

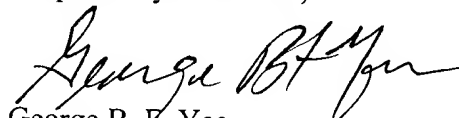
Since the Iwasaki and Iino et al. references do not show "Cu balls and Cu-Sn compounds containing  $\text{Cu}_6\text{Sn}_5$ , said Cu balls being bonded to each other by said Cu-Sn compounds," the Section 103 rejection of the claims is believed to be overcome.

### CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

  
George B. F. Yee  
Reg. No. 37,478

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, 8<sup>th</sup> Floor  
San Francisco, California 94111-3834  
Tel: 650-326-2400 / Fax: 415-576-0300  
Attachments  
GBFY:cmm / 60027410 v1